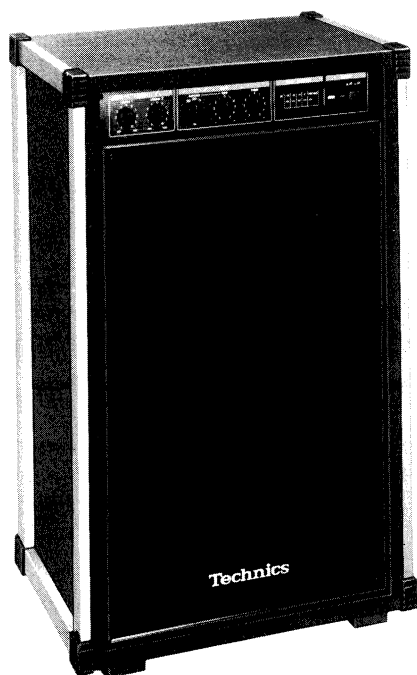


Service Manual

TONE CABINET

SY-T60

(EN), (ES), (ED), (EI), (EH), (EB), (EF),
(EG), (EW), (EL), (EP), (MC), (XT),
(EK), (XL), (XR), (XS), (X), (XX), (XV)



AREAS

(EN): Norway	(EK): the United Kingdom
(ES): Sweden	(MC): Canada
(ED): Denmark	(XT): Taiwan
(EI): Italy	(XL): New Zealand
(EH): Holland	(XR): Australia
(EB): Belgium	(XS): Malaysia, Singapore, South Africa
(EF): France	(X): the Middle Near East, Hong Kong, the Philippines, Indonesia
(EG): Germany, Austria	(XV): Venezuela, Ecuador, Panama
(EW): Switzerland	(XX): Peru, Chile
(EL): Finland	
(EP): Spain	

Specifications

Speakers:	30 cm (11-13/16")×1, 16 cm (6-5/16")×1, 5 cm (1-31/32")×1
Output:	150W (RMS)
Input:	1: pin jack, large jack, volume control 2: pin jack, large jack, volume control
Tone controls:	treble, bass, bass-turnover
Load indicator:	green (−15, −8, −3, 0dB), red (overload)
Others:	power switch, power indicator
Power requirement:	400W, 350VA (Canada) AC 120/220/240V 50/60Hz AC 120V 60Hz—North America
Cabinet (W×H×D):	45 cm (17-23/32")×65 cm (25-19/32")×33.7 cm (13-9/32")
Net weight:	36.4 kg (80.2 lbs.)
Accessories:	pin-type cord×2, AC cord

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

CONTENTS

■ INTRODUCTION

LOCATION OF CONTROLS	I-2
DISASSEMBLY INSTRUCTIONS	I-3

■ SCHEMATIC DIAGRAM

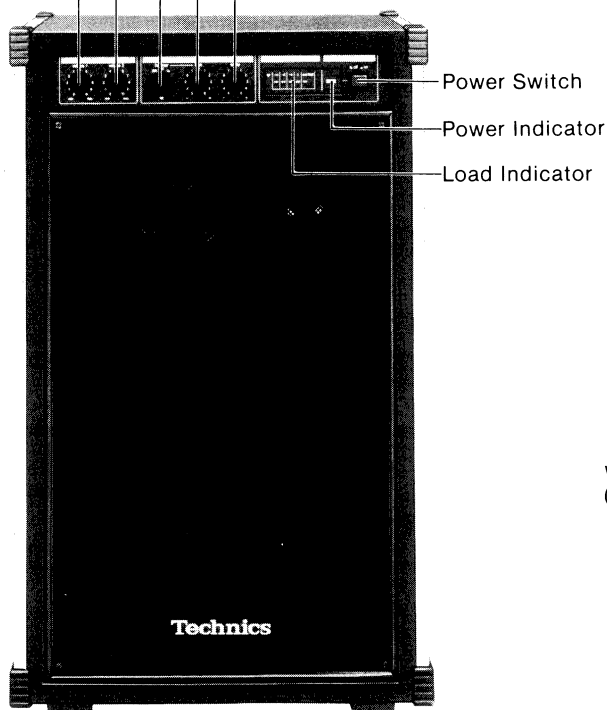
WIRING CONNECTION DIAGRAM	II-1
BLOCK DIAGRAM	II-2
TONE CONTROL CIRCUIT BOARD (TC)	II-4
JACK CIRCUIT BOARD (JACK)	II-4
LOAD INDICATOR CIRCUIT BOARD (LI)	II-5
NETWORK CIRCUIT (NW)	II-6
COMPRESSOR CIRCUIT BOARD (CMP)	II-6
TONE CONTROL (TC), JACK (JACK), LOAD INDICATOR (LI), COMPRESSOR (CMP) CIRCUIT DIAGRAM.....	II-7
AMP & POWER SUPPLY CIRCUIT DIAGRAM (AS)	II-9
AMP & POWER SUPPLY CIRCUIT BOARD (AS)	II-11
AC POWER SUPPLY CIRCUIT BOARD (ACP)	II-12

■ EXPLODED VIEWS & REPLACEMENT PARTS LIST

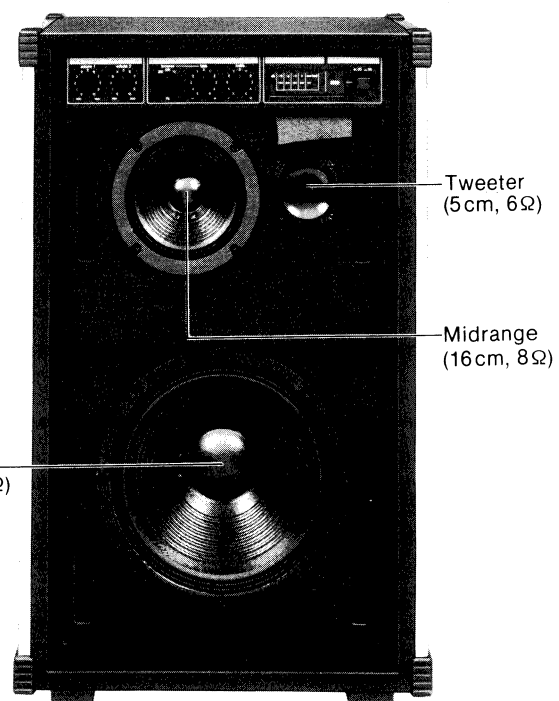
EXPLODED VIEWS OF CABINET	III-1
REPLACEMENT PARTS LIST	III-3
PACKING.....	III-6

LOCATION OF CONTROLS

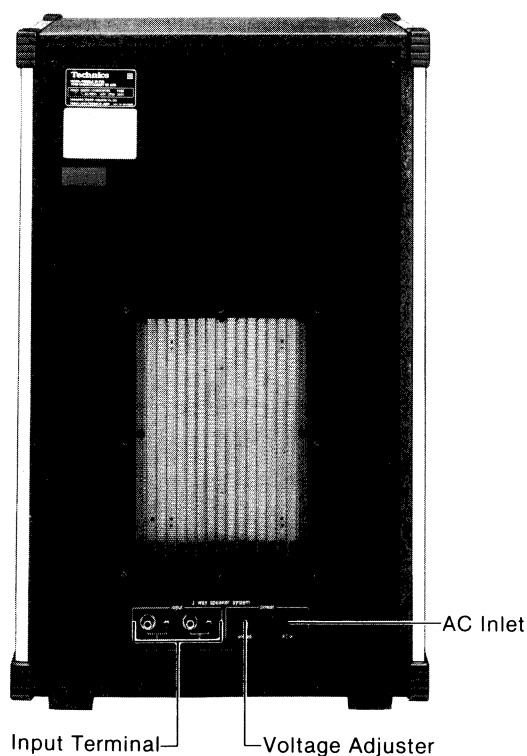
Volume Control { Volume 2
Volume 1 } Turnover
Bass Treble } Tone Control



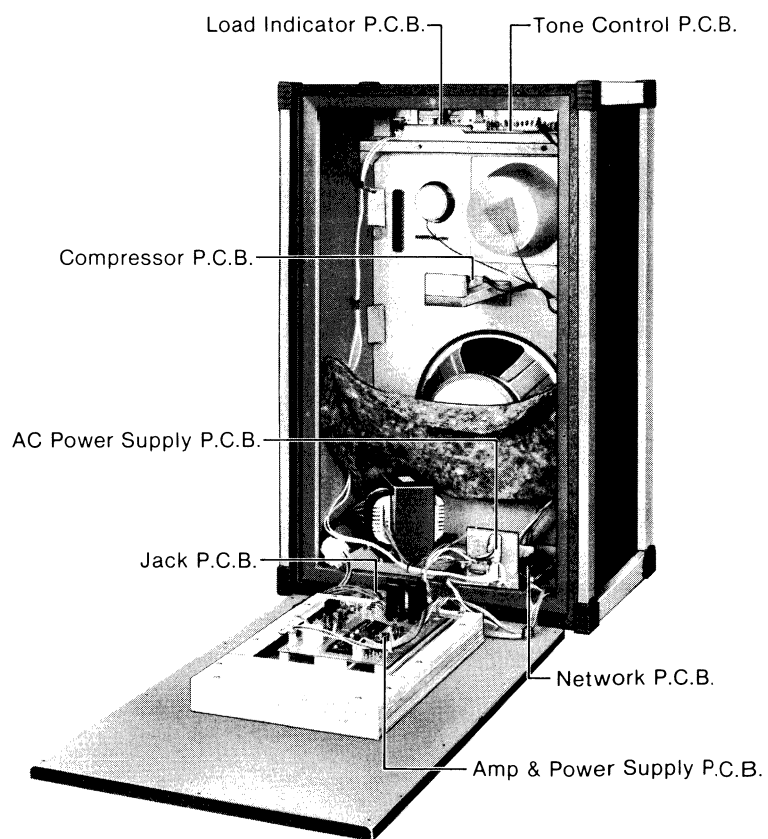
[Photo-1]



[Photo-2]



[Photo-3]



[Photo-4]

DISASSEMBLY INSTRUCTIONS

1. Speaker Gurille (Fig. 1)

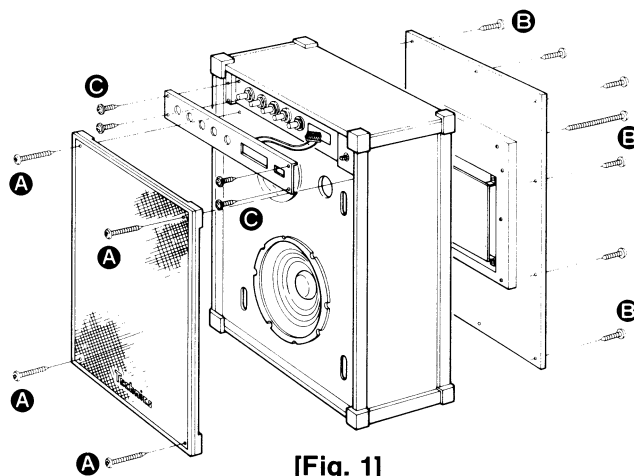
- Remove the 4 setscrews **A** which fasten the speaker gurille.
- The speaker gurille can be removed.

2. Rear Board (Fig. 1)

- Remove the 11 setscrews **B** located on the rear board.
- Then the rear board can be removed.

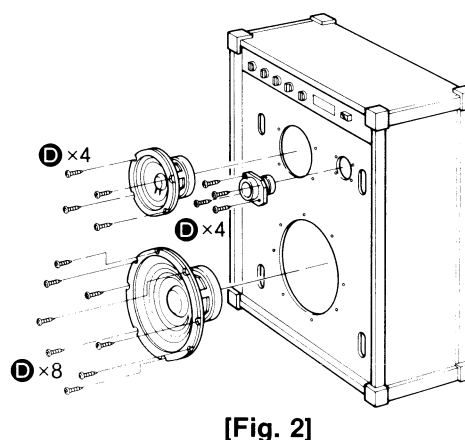
3. Control Panel (Fig. 1)

- Pull out the all knobs located on the control panel.
- Remove the 4 setscrews **C** which fasten the control panel.
- Then the control panel can be removed.



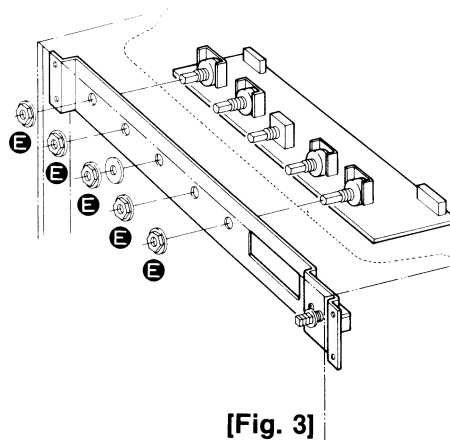
4. Speakers (Fig. 2)

- Remove the speaker gurille according to step 1.
- Remove the 8 setscrews **D** which fasten the woofer (30cm), and pull out the pin connector of speaker terminal. (Midrange 16cm, Tweeter 5cm.....4 setscrews **D**)
- Then the each speakers can be removed.



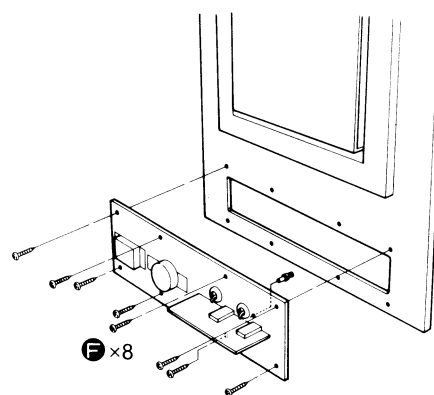
5. Tone Control P.C.B. (Fig. 3)

- Remove both rear board and control panel according to steps 2 and 3.
- Remove the 5 nuts **E** which fasten the each volumes, and pull out the tone control P.C.B. to rear side.
- Then the tone control P.C.B. can be removed.



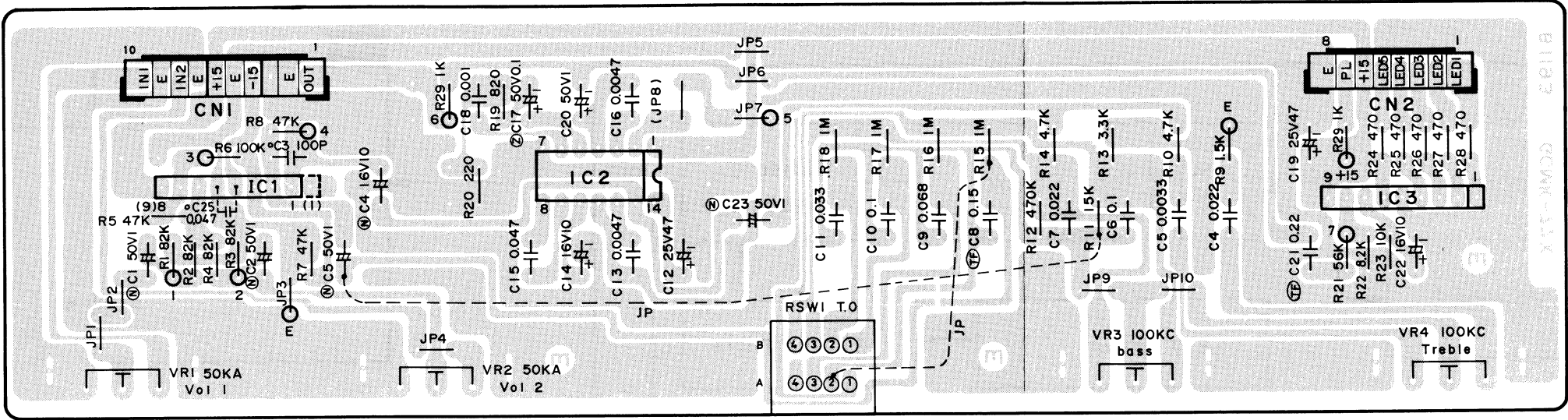
6. Jack Panel (Fig. 4)

- Remove the rear board according to step 2.
- Remove the 8 setscrews **F** which fasten the jack panel.
- Then the jack panel can be removed.

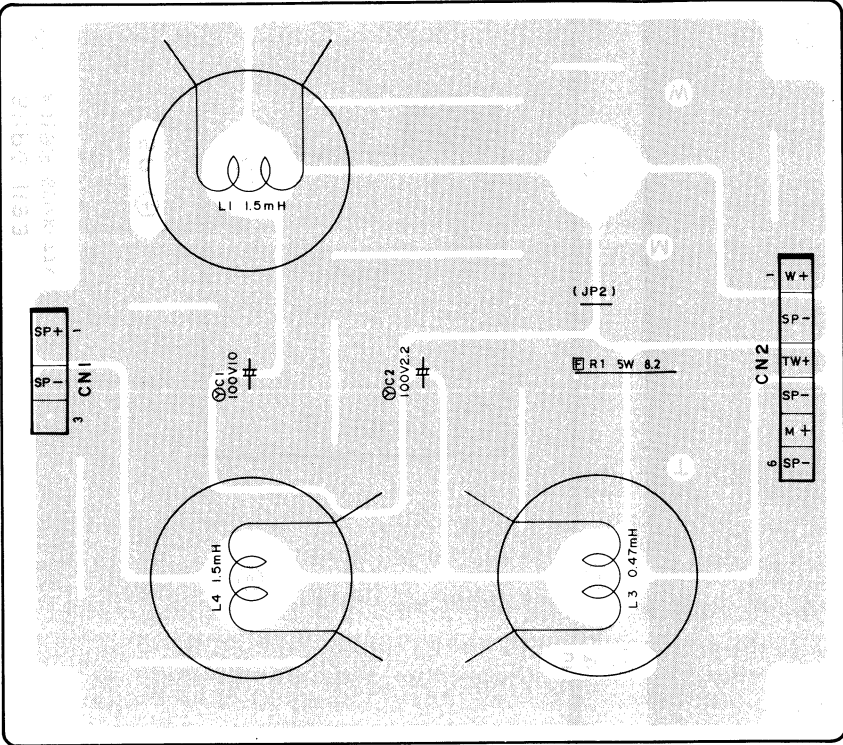


TONE CONTROL CIRCUIT BOARD (TC)

NETWORK CIRCUIT (NW)



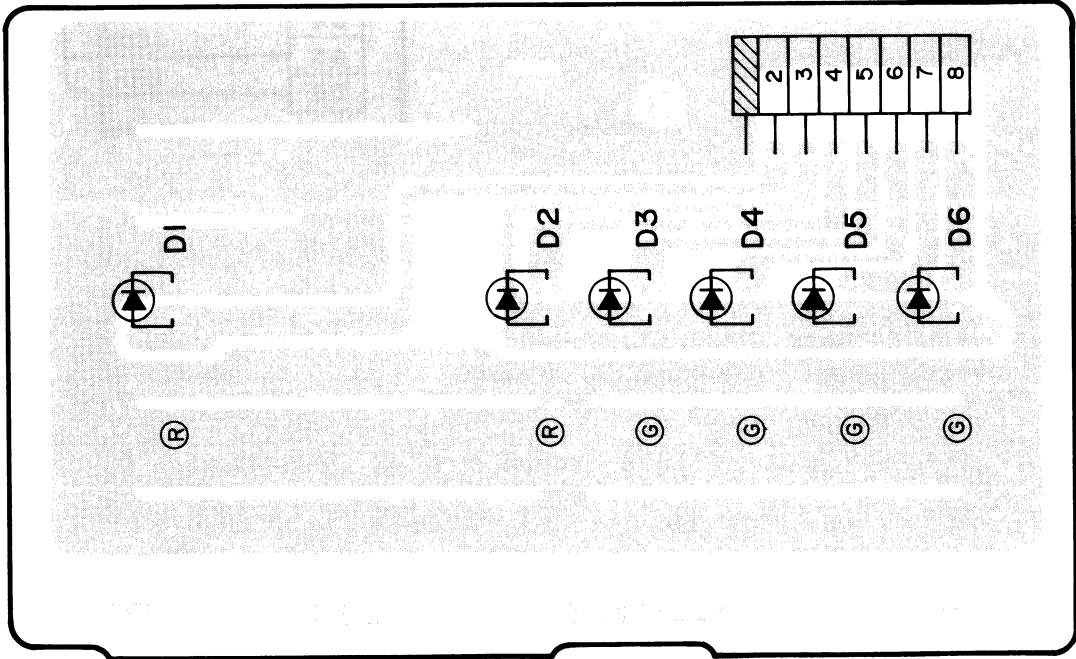
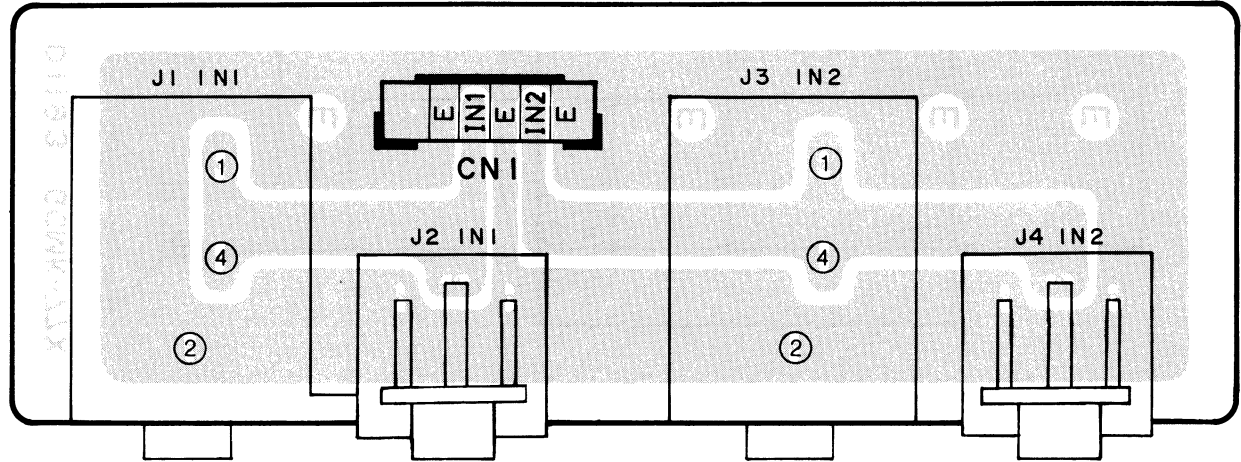
NOTES:
 • IC'S
 IC1: SVIGM5218L
 IC2: SVIGLM1894N
 IC3: SVIGBA6124



JACK CIRCUIT BOARD (JACK)

LOAD INDICATOR CIRCUIT BOARD (LI)

COMPRESSOR



NOTES:
 • DIODES
 D1, 2: LN846RP
 D3~6: LN346GP

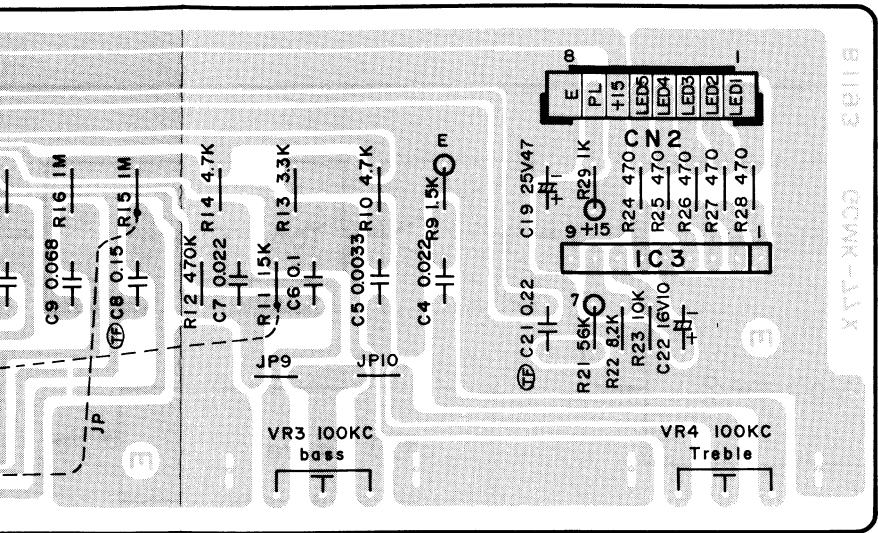
SXPGB11931

SXPGB11931

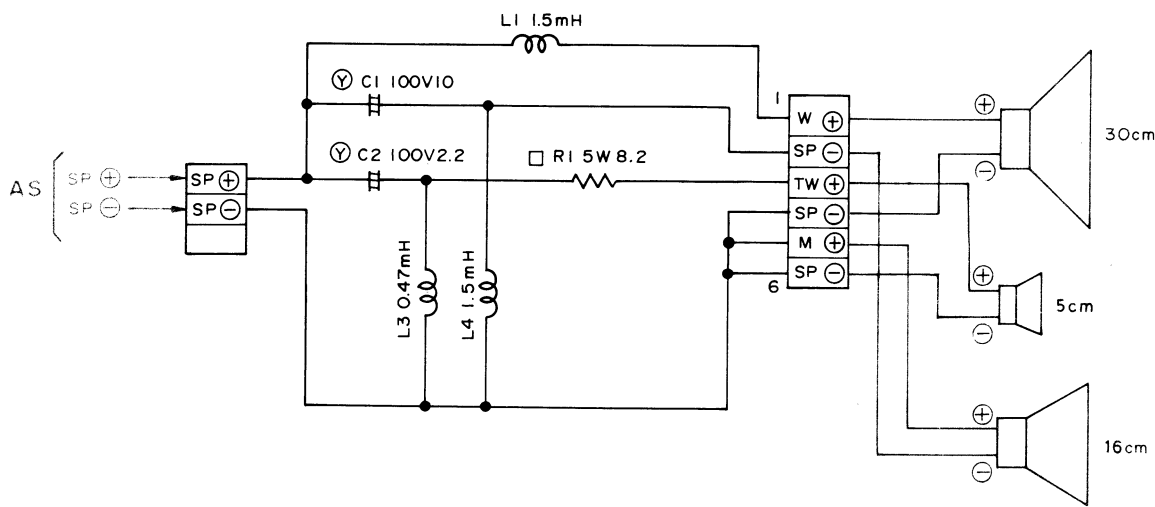
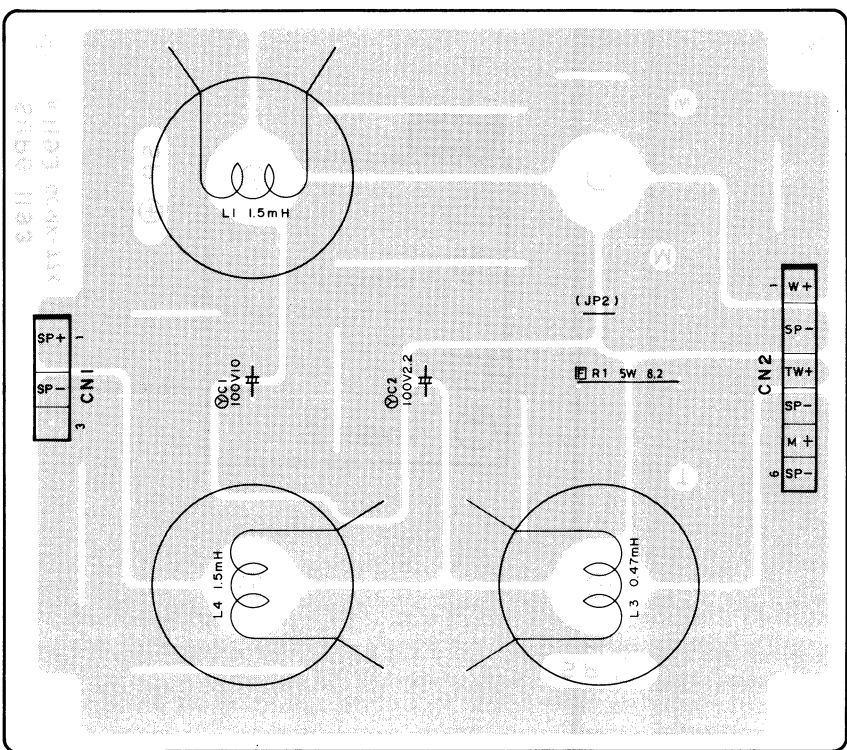
SXPGB11931

NETWORK CIRCUIT (NW)

SXPGB11931

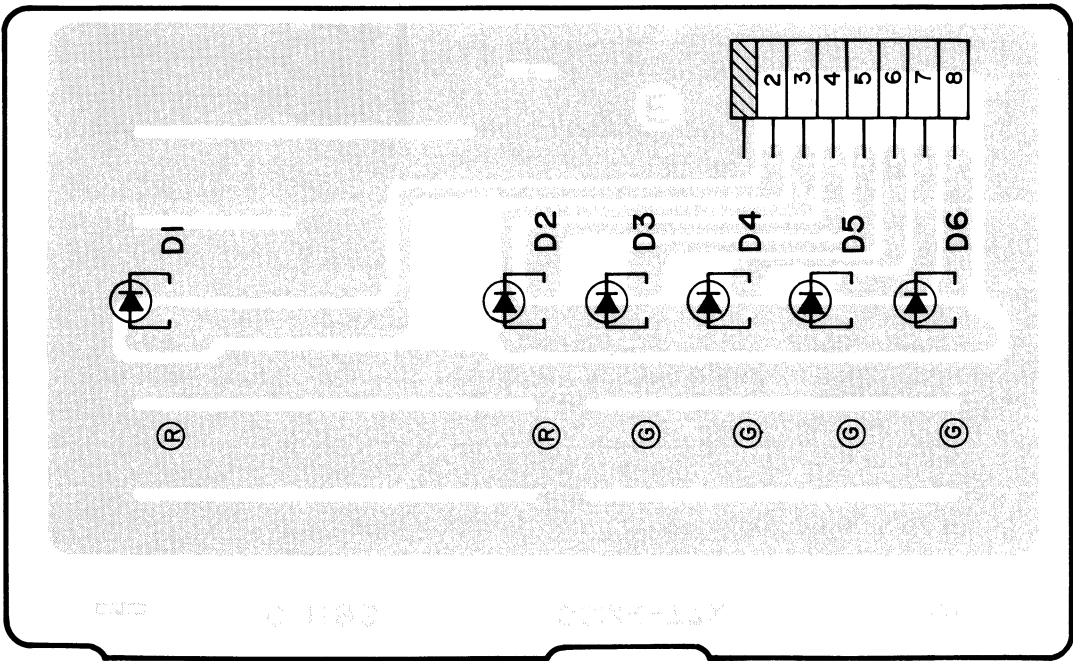


SXPGA11931



LOAD INDICATOR CIRCUIT BOARD (LI)

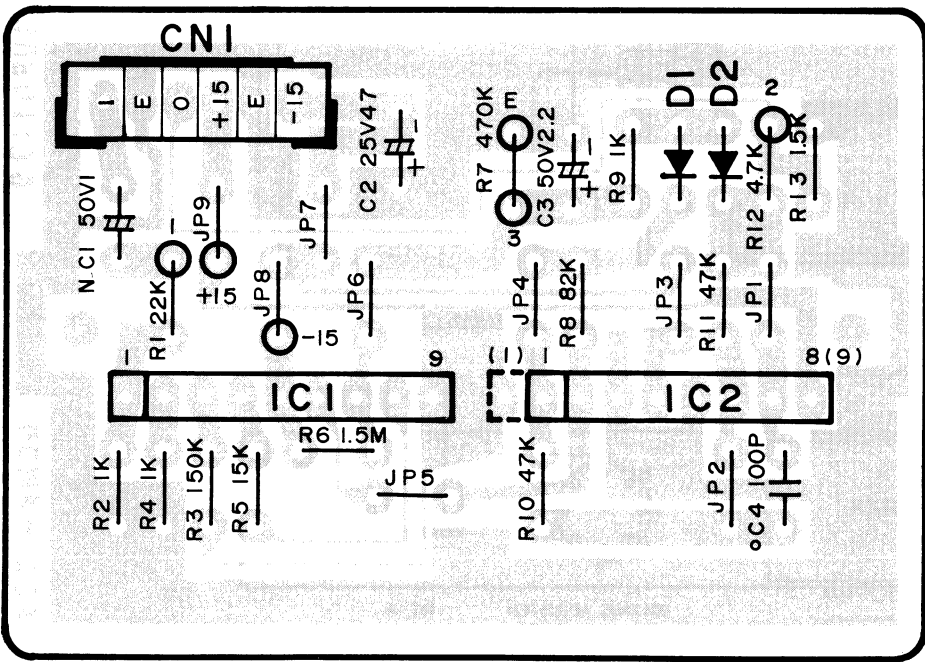
SXPGC11931



NOTES:
• DIODES
D1, 2: LN846RP
D3~6: LN346GP

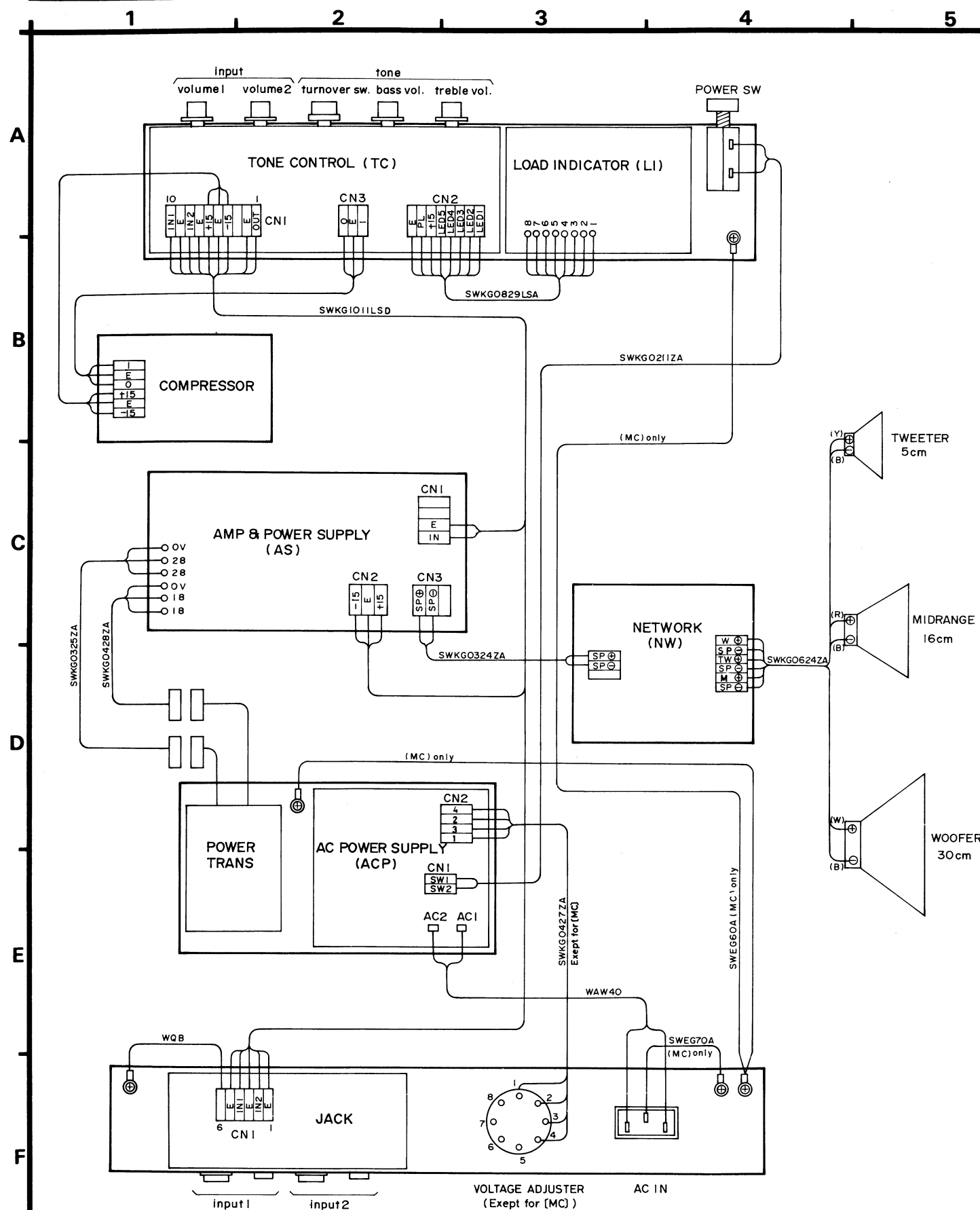
COMPRESSOR CIRCUIT BOARD (CMP)

SXPG11991



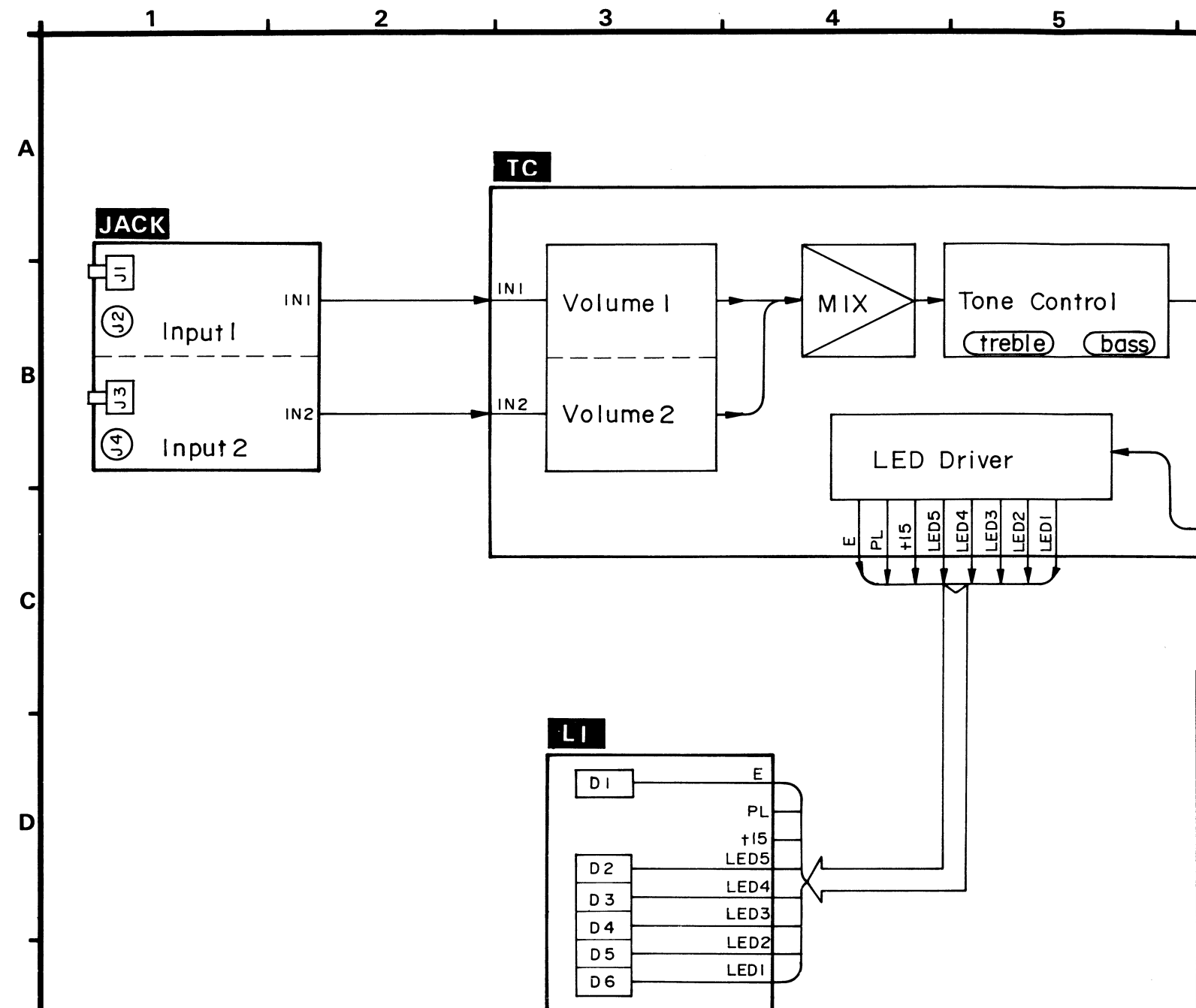
NOTES:
• IC'S
IC1: SVIGBA6110
IC2: SVIGM5218L
• DIODES
D1, 2: MA165TA5VT

WIRING CONNECTION DIAGRAM



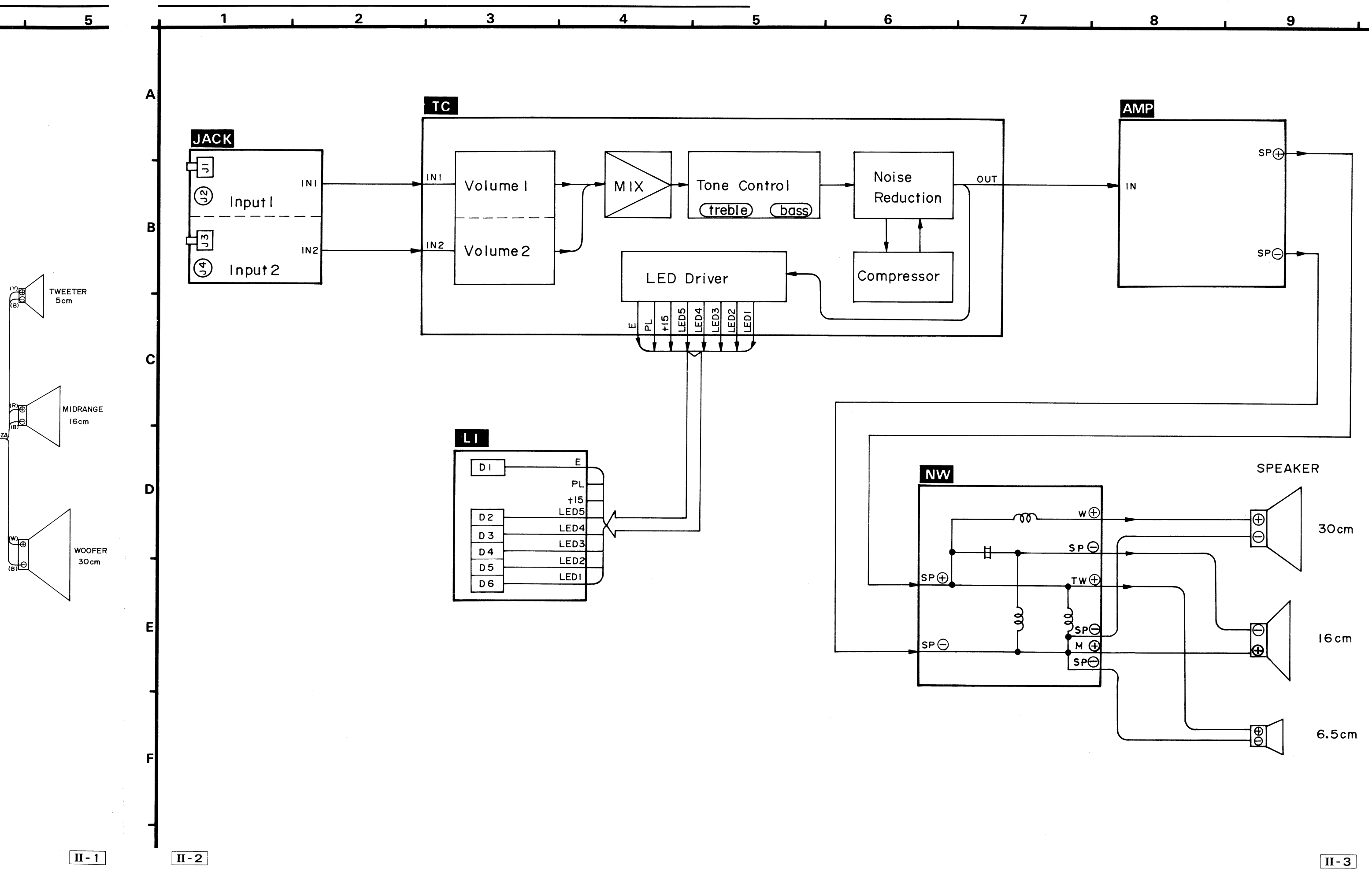
II - 1

BLOCK DIAGRAM



II - 2

BLOCK DIAGRAM

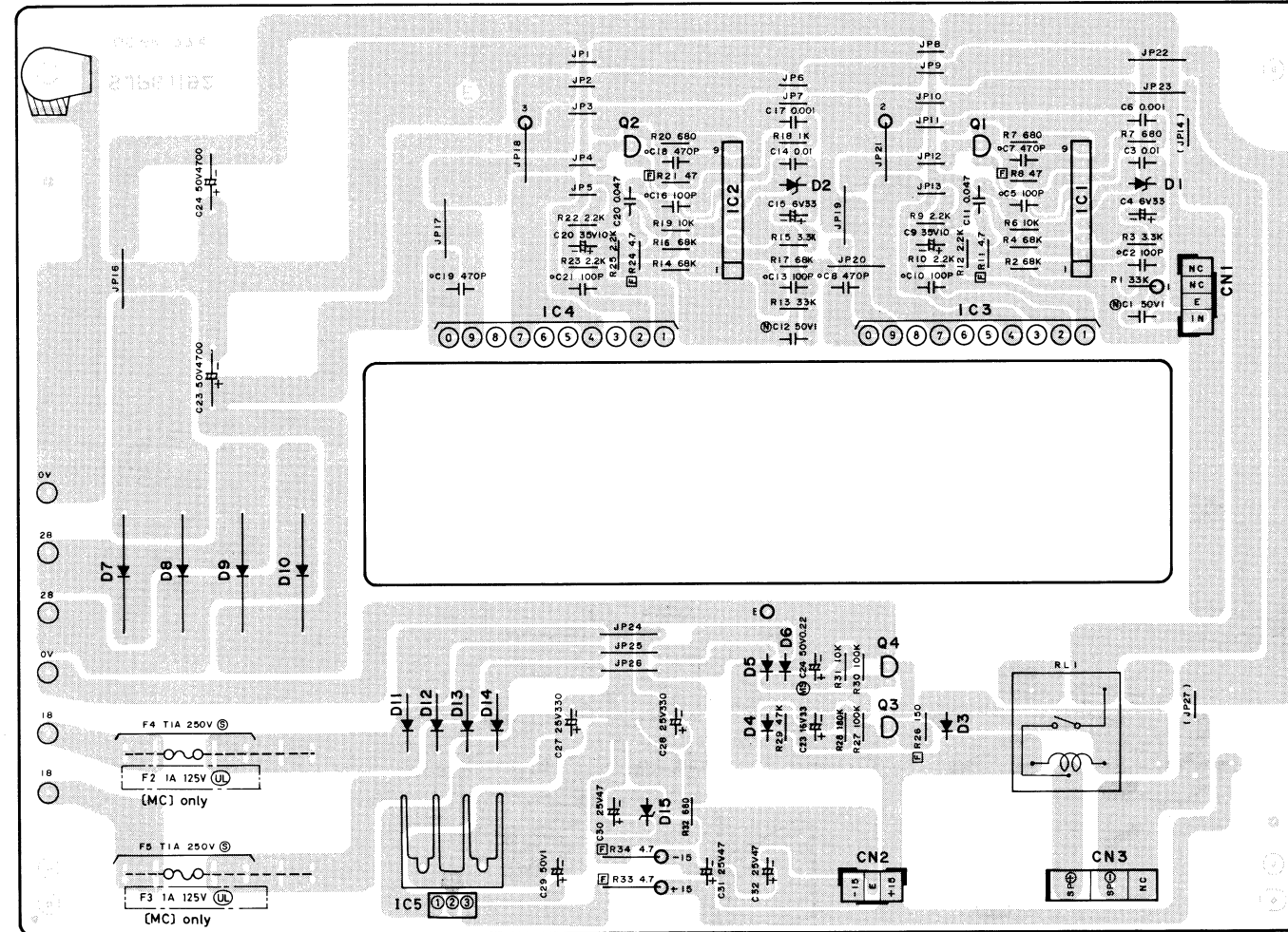


AMP & POWER SUPPLY CIRCUIT BOARD (AS)

SXPG11921

SXPG11922

* Products for [MC] only.



NOTES:

• IC'S

IC1, 2: AN7060
IC3, 4: SVIGS1050SL
IC5: AN7815

• TRANSISTORS

Q1, 2: 2SA1123RS
Q3: 2SD892QR
Q4: 2SC1318RS

• DIODES

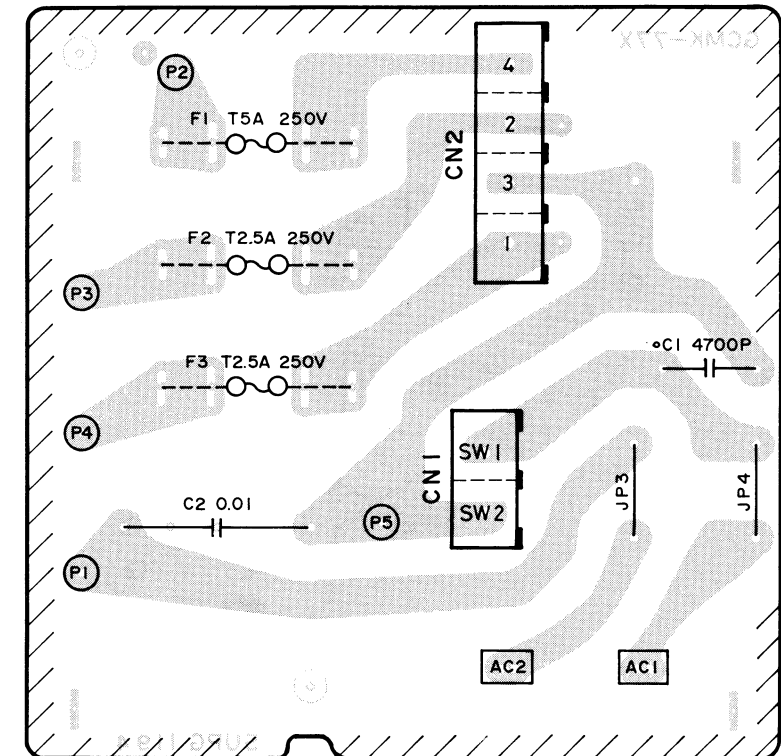
D1, 2: MA1062TR
D3~6: MA165TA5VT
D7~10: SVDS3V20
D11~14: SVDGSM1A02LF
D15: MA1150TR

• RELAY

RL1: SSYGMR3112D

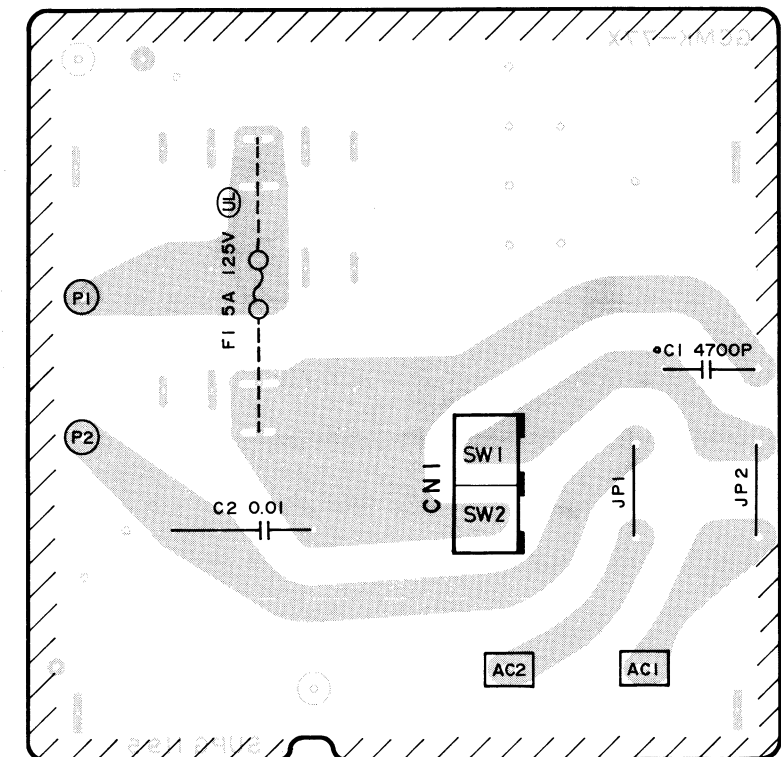
AC POWER SUPPLY CIRCUIT BOARD (ACP)

SXPG11941

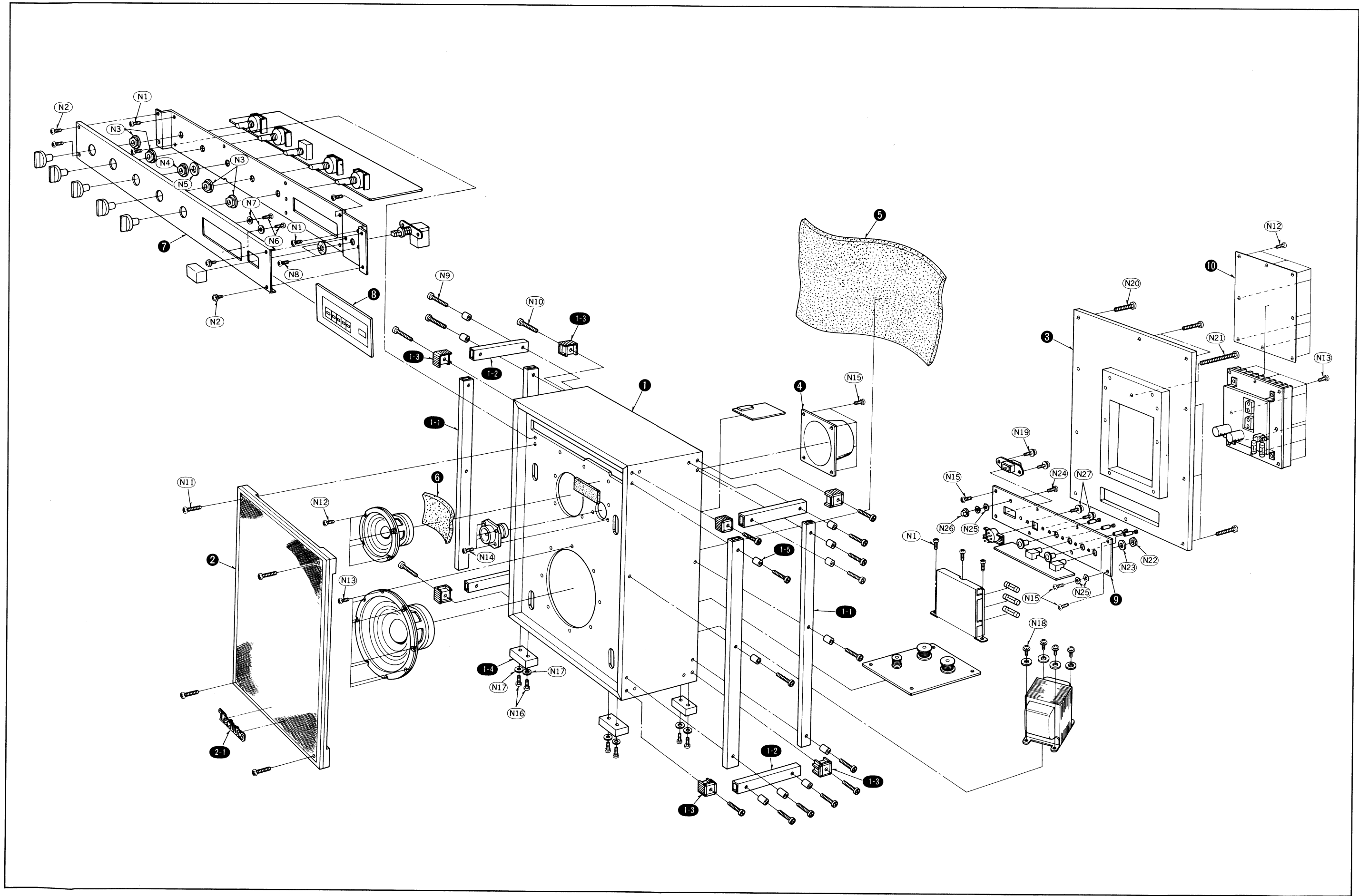


■ PRODUCTS FOR [MC] ONLY

SXPG11951



EXPLODED VIEWS OF CABINET



REPLACEMENT PARTS LIST

Notes:

- Printed circuit boards are supplied only during the period of production.
- Important safety notice
Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

3. \circ mark are new parts.

4. For part No. with area mark, check the area when placing an order.

ELECTRICAL PARTS

Part No.	Description	Per/ Set	Part No.	Description	Per/ Set
PRINTED CIRCUIT BOARDS			JACKS		
\circ SXPGA11931	Network	1	SJG30A	Input Terminal (pin jack)	2
\circ SXPGB11931	Tone Control	1	SJG150A	Input Terminal (large jack)	2
\circ SXPGC11931	Load Indicator	1			
\circ SXPGD11931	Jack	1	SJSG450A	AC Inlet	1
\circ SXPG11991	Compressor	1	SJSG460A	AC Inlet, (MC) only	1
\circ SXPG11921	Amp & Power Supply	1			
\circ SXPG11922	Amp & Power Supply, (MC) only	1	RELAYS		
\circ SXPG11941	AC Power Supply	1	SSYGM3112D		1
\circ SXPG11951	AC Power Supply, (MC) only	1			
INTEGRATED CIRCUITS			SPEAKERS		
SVIGM5218L	Operational Amplifier	TC, CMP	\circ EAS30PL117S	30cm, 8 Ω	1
SVIGLM1894N	Noise Reduction	TC	\circ EAS16PM242S	16cm, 8 Ω	1
\circ SVIGBA6124	LED Driver	TC	EAS5HH60S	5cm, 6 Ω	1
SVIGBA6110	VCA (Voltage Controlled Amplifier)	CMP			
\circ SVIGS1050SL	Power IC	AS	FUSES		
AN7815	Voltage Regulator	AS	XBA2C10TR0 Δ	1A, 250V	2
AN7060	Power Amp Driver	AS	XBA2C50TR0 Δ	5A, 250V	1
			XBA2C25TR0 Δ	2.5A, 250V	2
TRANSISTORS			XBA1F10NU14 Δ	1A, 125V	2
2SA1123R		2	\circ XBA1F50NU14 Δ	5A, 125V (MC) only	1
2SC1318S		1			
\circ 2SD892QR		1	TRANSFORMERS		
DIODES, LED'S			\circ SLTG5S8 Δ	Power Transformer	1
MA165TA5VT		6	\circ SLTG5S9 Δ	Power Transformer, (MC) only	1
MA1062	Zener	2			
MA1150		1	AC CORD, PLUG		
SVDGSM1A02LF	Rectifier	4	\circ SJAG46 Δ	AC Cord	1
SVDS3V20 Δ	Rectifier	4	\circ SJAG44 Δ	AC Cord, (MC) only	1
\circ LN846RP	LED (red)	2	\circ SJAG47 Δ	AC Cord, (EK, XS) only	1
\circ LN346GP	LED (green)	4	\circ SJAG48 Δ	AC Cord, (XL, XR) only	1
			\circ SJAG49 Δ	AC Cord, (EW) only	1
COILS			\circ SJP5213-1 Δ	Attachment plug, (X, XX, XV, XT) only	1
\circ SLCSC471KU	0.47mH Coil (Network)	1			
\circ SLCSC152KU	1.5mH Coil (Network)	2	WIRING PARTS		
SWITCHES			\circ SWKG1011LSD	Connector, with Wire	1
ESB70291S Δ	Power Switch	1	\circ SWKG0324ZA	Connector, with Wire	1
ESB70454T Δ	Power Switch, (MC) only	1	\circ SWKG0624ZA	Connector, with Wire	1
\circ SSRG50A	Turnover Switch	1	\circ SWKG0325ZA	Connector, with Wire	1
ESE37209 Δ	Voltage Adjuster	1	\circ SWKG0428ZA	Connector, with Wire	1
			\circ SWKG0211ZA	Connector, with Wire	1
VARIABLE RESISTORS			\circ WAW40	Wire	2
EVA3225C15G	100K Ω C, bass, treble	2	\circ SWKG0427ZA	Connector, with Wire, Except for, (MC)	1
\circ EVA0382554G	50K Ω A, volume 1, volume 2	2	\circ SWEG60A	Wire, with Earth Terminal, (MC) only	1
			\circ SWEG70A	Wire, with Earth Terminal, (MC) only	1

■ Numbering System of Resistor

Resistor Type	Wattage	Tolerance
ERD : Carbon	S2 : 1/4W	J : ±5%
ERD—F : Carbon Flame-Proof	2 : 1/4W 25 : 1/4W	K : ±10%
ERF : Wire Wound	5 : 5W	

Example

ERD	S2	T	J	101
Type	Wattage	Shape	Tolerance	Value
ERD	2	F	C	101
Type	Wattage	Flame Proof	Fuse Type	Tolerance Value
ERF	5	ZX	K	8R2
Type	Wattage	Shape	Tolerance	Value

■ Numbering System of Capacitor

Capacitor Type	Symbol Mark	Voltage		Tolerance
		ECEA Type	Others	
ECEA : Electrolytic		0J : 6.3V	1H : 50V DC	ECEA Type : ±20%
ECEA—N : Non-Polar Electrolytic	(N)	1C : 16V		J : ±5%
ECEA—Y : Non-Polar Electrolytic	(Y)	1E : 25V		K : ±10%
ECEA—M : Electrolytic, MSR Series	(MS)	1V : 35V		M : ±20%
ECEA—Z : Electrolytic, Z Series	(Z)	1H : 50V		
ECQV : TF Capacitor	(TF)	100Y : 100V		
ECC : Ceramic	(O)	50M : 50V		
ECK : Ceramic	(O)	50Z : 50V		
ECQM : Polyester				

Example	ECEA	0J	U	330
Type	Voltage	Peculiarity use	Value	
ECEA	50	M (Z)	R47	R
Type	Voltage	Peculiarity use	Value	Special u
ECQV (M)	1H	102	J	
Type	Voltage	Value	Tolerance	
ECC (K)	R	1H	220	J
Type	Shape	Voltage	Value	Tolerance

Part No.	Description	Per/ Set	Part No.	Description	Per/ Set
RESISTORS			CAPACITORS		
ERDS2TJ221	220Ω	1	ECEA0JU330	6.3V, 33μF	2
ERDS2TJ471	470Ω	5	ECEA1CU330	16V, 33μF	1
ERDS2TJ681	680Ω	3	ECEA1CU100	16V, 10μF	2
ERDS2TJ821	820Ω	1	ECEA1EU470	25V, 47μF	6
ERDS2TJ102	1KΩ	7	ECEA1EU331	25V, 330μF	2
ERDS2TJ152	1.5KΩ	2	ECEA1VU100	35V, 10μF	2
ERDS2TJ222	2.2KΩ	6	ECEA1HU010	50V, 1μF	3
ERDS2TJ332	3.3KΩ	3	ECEA1HU2R2	50V, 2.2μF	1
ERDS2TJ472	4.7KΩ	2	ECET50R472SW	50V, 4700μF	2
ERDS2TJ822	8.2KΩ	1	ECEA1CN100S	(N) 16V, 10μF	1
ERDS2TJ103	10KΩ	4	ECEA1HN010S	(N) 50V, 1μF	8
ERDS2TJ153	15KΩ	2	ECEA100Y2R2	(Y) 100V, 2.2μF	1
ERDS2TJ223	22KΩ	1	ECEA100Y10	(Y) 100V, 1μF	1
ERDS2TJ333	33KΩ	2	ECEA50ZR1	(Z) 50V, 0.1μF	1
ERDS2TJ473	47KΩ	6	ECEA50MR22R	(MS) 50V, 0.22μF	1
ERDS2TJ563	56KΩ	1	ECQM1H102KV	0.001μF	3
ERDS2TJ683	68KΩ	6	ECQM1H332KV	0.0033μF	1
ERDS2TJ823	82KΩ	5	ECQM1H472KV	0.0047μF	2
ERDS2TJ104	100KΩ	3	ECQM1H103KV	0.01μF	2
ERDS2TJ154	150KΩ	1	ECQM1H223KV	0.022μF	2
ERDS2TJ184	180KΩ	1	ECQM1H333KV	0.033μF	1
ERDS2TJ474	470KΩ	1	ECQM1H473KV	0.047μF	3
ERDS2TJ105	1MΩ	4	ECQM1H683KV	0.068μF	1
ERDS2TJ155	1.5MΩ	1	ECQM1H104KV	0.1μF	2
△ ERD2FCJ4R7	(F) 1/4W 4.7Ω, Fuse Type	2	ECQV1H154JZ	(TF) 0.15μF	1
△ ERD25FVJ4R7	(F) 1/4W 4.7Ω	2	ECQV1H224JZ	(TF) 0.22μF	1
△ ERD25FVJ151	(F) 1/4W 150Ω	1	ECCR1H101J5	○ 100PF	8
△ ERD25FVJ470	(F) 1/4W 47Ω	2	ECCR1H471J5	○ 470PF	4
△ ERF5ZXK8R2	(F) 5W 8.2Ω	1	ECKR1E473ZV	○ 0.047μF	1
			△ ECKCVA1472MF	○ 4700PF, Line Capacitor	1
			△ ECQU1A103MH	0.01μF, 125V, Across the Line Capacitor (MC)	1
			△ ECQU2A103MF	0.01μF, 250V, Across the Line Capacitor	1

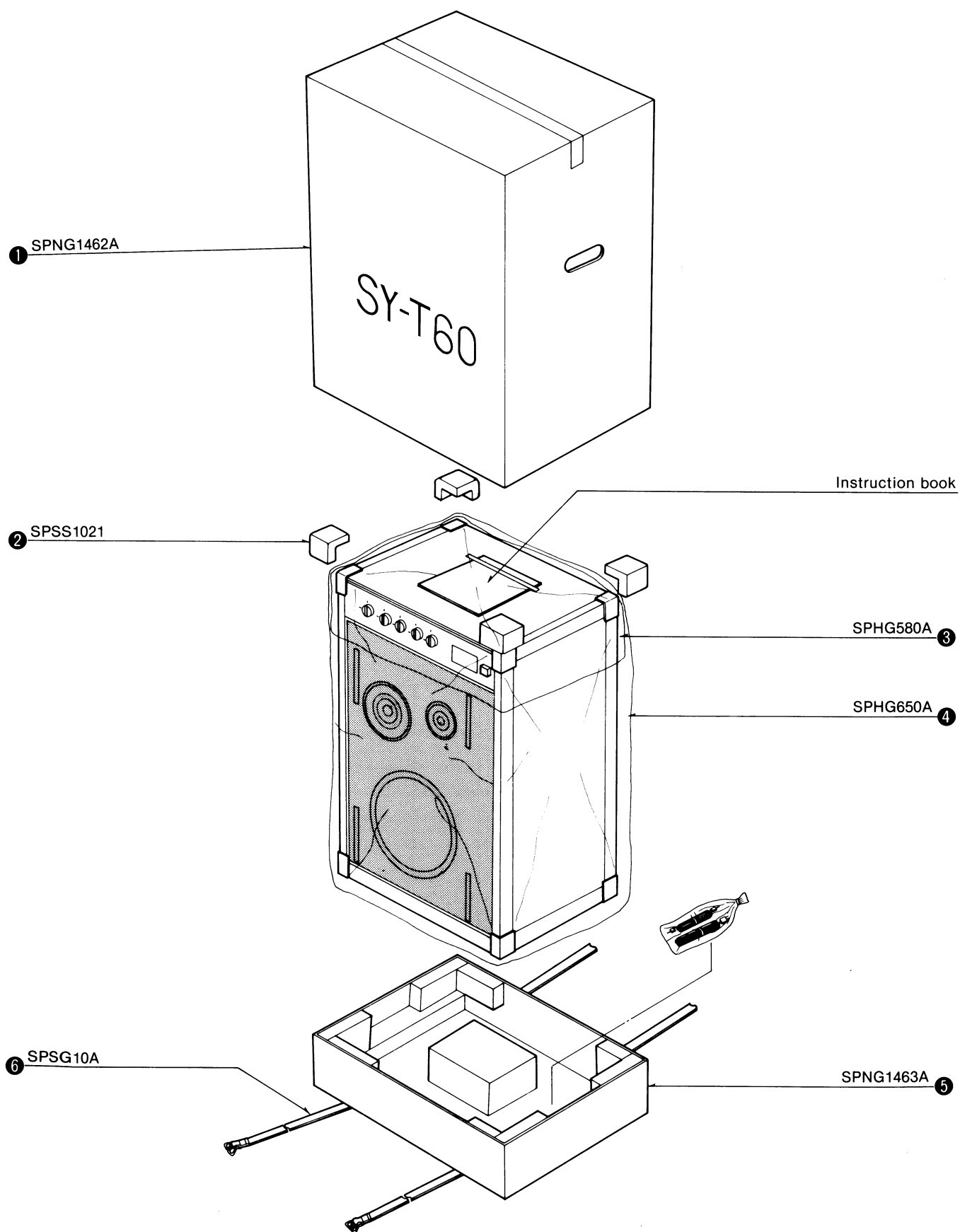
MECHANICAL PARTS

Ref. No.	Part No.	Description	Per/ Set
CABINET			
○ 1	SKMG880AS	Cabinet	1
○ MC	SKMG890AS	Cabinet	1
○ 1-1	SGXG1220A	Ornament Pipe	4
○ 1-2	SGXG1221A	Ornament Pipe	4
○ 1-3	SHRG7260A	Corner Cushion	8
○ 1-4	SHRG2110A	Foot	4
○ 1-5	SUDG0070A	Spacer	20
○ 2	SKZG4350A	Speaker Gurille Assembly	1
○ 2-1	SGBG60A	Technics Badge	1
○ 3	SKFG1090A	Rear Board Assembly	1
○ 4	SUVS5-1	Speaker Cover	1
○ 5	SHSG9150A	Sound Absorbing Material	1
○ 6	SHSG9160A	Sound Absorbing Material	1
○ 7	SGWG1400A	Control Panel	1
○ 8	SGKG2080A	Load Indicator Display Panel	1
○ 9	SMKG1680A	Jack Panel	1
○	SMKG1682A	Jack Panel, (MC) only	1
○ 10	SGMG70A	Rear Net	1
ACCESSORIES			
○	SQLG10A	Caster Assembly	1
○	SJEG10A	Pin Cord (white)	1
○	SJEG20A	Pin Cord (red)	1
SCREWS and WASHERS			
N1	XTB35 + 12A	Screw	
N2	XTW3 + 8CFZ	Screw	
N3	SNES4004	Nut	
N4	XNS7	Nut	
N5	XWV8	Washer	
N6	XTW3 + 8J	Screw	
N7	XWA4B	Washer	
N8	XSN3 + 6S	Screw	
N9	SNZS9003-2FJ	Screw	
N10	SNES9003-2FG	Screw	
N11	SNEG580A	Screw	
N12	XTB4 + 12AFZ	Screw	
N13	XTB4 + 20AFZ	Screw	
N14	XTB35 + 20AFZ	Screw	
N15	XTB4 + 12A	Screw	
N16	XTB5 + 20A	Screw	
N17	XWG5G16	Washer	
N18	XYN5 + F35S	Screw with Washers	
N19	XTB3 + 8BFZ	Screw	
N20	XTC4 + 30FZ	Screw	
N21	XTS4 + 70AFZ	Screw	
N22	XNS12FZ	Nut	
N23	SNEG770A	Washer	
N24	XTN4 + 10FFZ	Screw	
N25	XWC4BFN	Washer	
N26	SNE499-1	Nut	
N27	XYN3 + F10FZS	Screw with Washers	
KNOB, BUTTON			
	SBNS9	Volume 1 • 2, turnover, bass, treble	5
	SBCG20I	Power Switch	1
INSTRUCTION BOOK			
○	SQFG1330		1

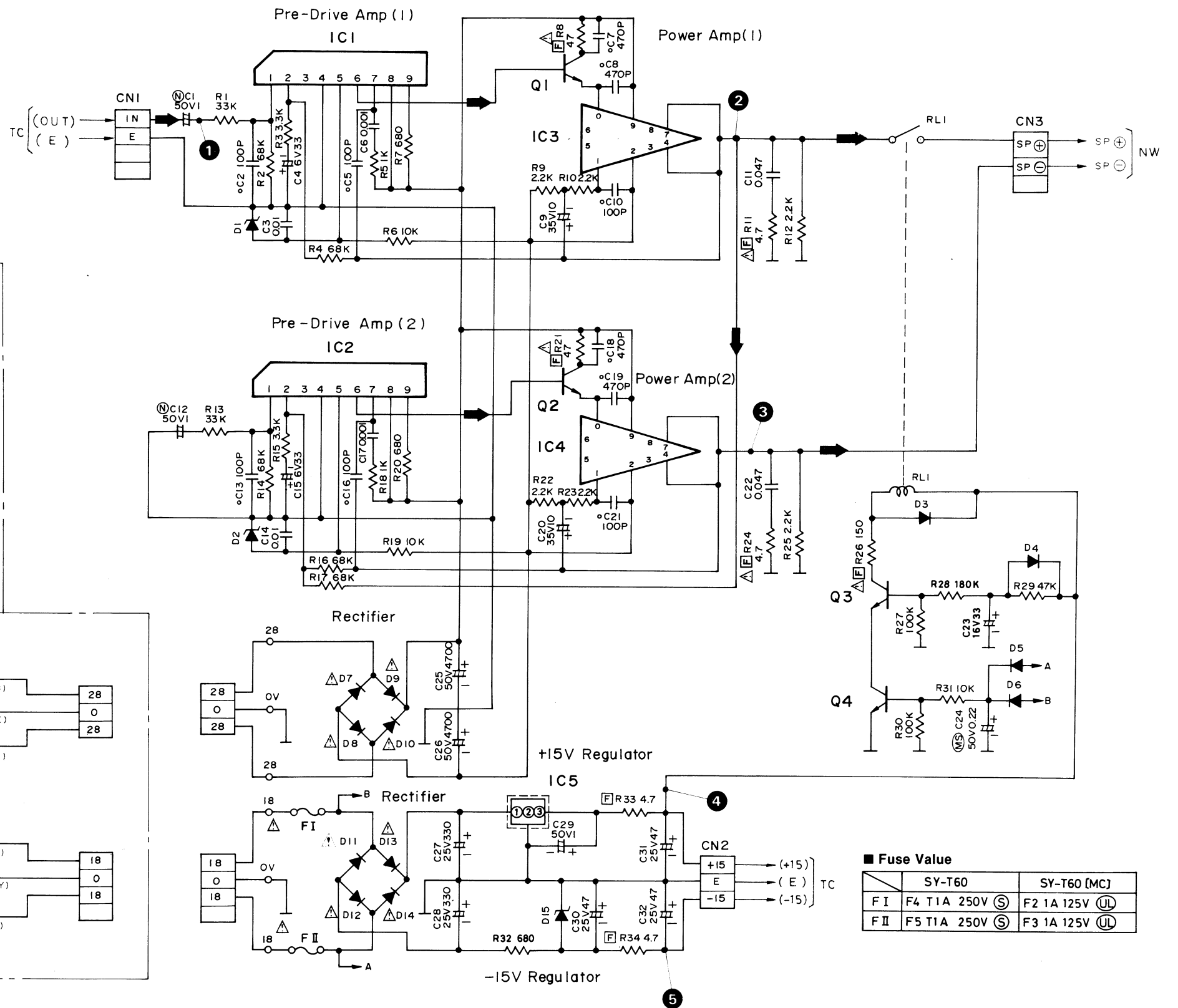
PACKING PARTS

Ref. No.	Part No.	Description	Per/ Set
○ 1	SPNGT60EA	Packing Parts Assembly	1
○ 2	SPNG1462A	Carton Box	(1)
○ 3	SPSS1021	Pad	(4)
○ 4	SPHG580A	Protection Cover	(1)
○ 5	SPHG650A	Polyethylene Bag	(1)
○ 6	SPNG1463A	Bottom Case	(1)
	SPSG10A	Band	(2)

PACKING



AMP & POWER SUPPLY CIRCUIT DIAGRAM (AS)



	SY-T60	SY-T60 [MC]
F I	F4 T1A 250V (S)	F2 1A 125V (UL)
F II	F5 T1A 250V (S)	F3 1A 125V (UL)

- IC'S

- IC'S
 - IC1, 2: AN7060
 - IC3, 4: SVIGS1050SL
 - IC5: AN7815

- TRANSISTORS
 - Q1, 2: 2SA1123RS
 - Q3: 2SD892QR
 - Q4: 2SC1318RS

- DIODES
 - D1, 2: MA1062TR
 - D3~6: MA165TA5VT
 - D7~10: SVDS3V20
 - D11~14: SVDGSM1A02LF
 - D15: MA1150TR

- RELAY
RL1: SSYGMR3112D

TONE CONTROL (TC), JACK (JACK), LOAD INDICATOR (LI), COMPRESSOR (CMP) CIRCUIT DIAGRAM

